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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,143	03/31/2004	Angel Stoyanov	WEYE121925/25324	8224
28624	7590	11/16/2007	EXAMINER	
WEYERHAEUSER COMPANY			CORDRAY, DENNIS R	
INTELLECTUAL PROPERTY DEPT., CH 1J27			ART UNIT	PAPER NUMBER
P.O. BOX 9777			1791	
FEDERAL WAY, WA 98063				

  

NOTIFICATION DATE	DELIVERY MODE
11/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[patents@weyerhaeuser.com](mailto:patents@weyerhaeuser.com)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/815,143	STOYANOV ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Dennis Cordray	1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 July 2007.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 3-13 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 and 3-13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Response to Arguments***

Applicant's arguments filed 7/16/2007 have been fully considered but they are only partially persuasive.

Rejections under 35 U.S.C. 112: The arguments and amendments have overcome the rejection of Claims 5-9 under 35 U.S.C. 112, second paragraph as being indefinite for failing to clarify that the bleaching of the fibers occurs subsequent to crosslinking.. Therefore, the rejection has been withdrawn for Claims 5-9 pertaining to the order of crosslinking ang bleaching. The remaining rejections of Claims 1, 3-13 under 35 U.S.C. 112, 102 and 103 are maintained.

Applicants argue that it is clear from the claim language of claims 1 and 10 that the polyacrylic acid crosslinked are treated with a bleaching agent after crosslinking and state that this meaning is consistent with Claim 5 and with the specification. Claims 1, 5 and 10 are independent. Claim 5 recites that the bleaching agent is applied to the crosslinked fibers. Claims 1 and 10, however, are not required to share any of the limitations of Claim 5. Also, limitations appearing in the specification but not recited in the claim are not read into the claims. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550- 551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) The claims are interpreted as broadly as their terms reasonably allow.

Claims 1 and 10 recite bleached fibers, polyacrylic acid crosslinked fibers and cellulosic fibers in a sequence of adjectives. The claim further recites polyacrylic acid crosslinked cellulosic fibers treated with a bleaching agent. No part of the claim recites a definite order of treatment, thus the claim reads on cellulosic fibers that are bleached and subsequently crosslinked using polyacrylic acid, cellulosic fibers that are crosslinked using polyacrylic acid and subsequently bleached, cellulosic fibers that are simultaneously crosslinked using polyacrylic acid and treated with a bleaching agent, bleached cellulosic fibers that are subsequently crosslinked using polyacrylic acid then bleached again, as well as any other sequence of crosslinking and bleaching steps. Since the claim reads on multiple independent and distinct processes, the language is indefinite.

With regard to the determinations of Whiteness Index (WI), Applicants argue that the specification makes it clear that Claims 1, 5 and 10 mean that the initial determination is made on the day the fibers are treated. As above, limitations appearing in the specification but not recited in the claim are not read into the claims. The claims, as written, read on an initial determination at some time following treatment of the fibers and a second determination at some time following the first (5 minutes? An hour? A day? 14 days after treatment?) and up to 14 days after treatment. Many intervening treatments can affect the brightness of the fibers (i.e.-length of bleaching treatment, additional bleaching, application of whitening agents, crosslinking etc.). Applicant states that possible intervening steps are irrelevant. They are not irrelevant. The history of the fibers over the 14 days can affect their whiteness and failing to

specify the history makes the claim indefinite. In a conventional bleaching treatment, a determination of WI immediately after contact with a bleaching agent would obviously reveal a WI close to that of the untreated fibers. Since a purpose of bleaching is to provide whiter, brighter fibers, a second determination at the end of a bleaching step would obviously reveal a WI higher than the initial determination. It is also noted that Table 2 in the Specification even shows a decrease in WI for some fibers (Sample E) treated with sodium hydroxide only, a chemical that is recited in the Claims as a bleaching agent, and a decrease in WI between 1 and 14 days for samples E-G. Indeed, it is also noted that Table 2 indicated that untreated fibers also show an increase in WI over 14 days.

With regard to the arguments against the art rejections, Applicants argue that Herron teaches that polyacrylic acid crosslinked fibers are brighter than those crosslinked with alpha-hydroxy acids but does not provide motivation for further brightened fibers. Applicants agree that Heron also teaches using bleached pulp, thus bleached polyacrylic acid crosslinked fibers are taught comprising fibers that are both crosslinked and treated with a bleaching agent. Applicants also agree that post-crosslink bleaching is taught by Herron et al but argue that no motivation is given to bleach polyacrylic acid crosslinked fibers after crosslinking. Since all of the elements of Claim 1 are taught by Herron et al (pre-crosslinking bleaching, polyacrylic acid crosslinking, and post-crosslinking bleaching), the reference is anticipatory and motivation is not needed.

Applicants argue that, for a fair and complete understanding, the statement of post-crosslinking bleaching must be considered in its context. The sentence is couched in the paragraph (col 12, line 40 to col 13, line 22 of Herron et al) discussing WRV values and a discussion of highly crosslinked, exceedingly stiff, and low absorbent capacity fibers. Applicant argues that the sentence, which reads, "Post-crosslinking treatment of the fibers such as the degree of bleaching and the practice of post-crosslinking bleaching steps have been found to affect WRV," should be interpreted as meaning post-crosslinking bleaching steps have a negative affect on WRV, thus teaching away from post-crosslinking bleaching. First, the discussion of exceedingly stiff, and low absorbent capacity fibers pertains to the degree of crosslinking, not to bleaching. Second, the effect of post-crosslinking on WRV has been addressed twice previously, and the previous discussions are repeated below for completeness:

From the Office Action dated 11/21/2005 - With respect to the rejection of claims 3, 4 and 6-9, Applicants have argued that the Herron reference teaches away from bleaching crosslinked fibers by suggesting that bleaching steps have been found to adversely affect WRV. Herron et al states only that "post-crosslinking bleaching steps have been found to affect WRV." There is no statement that the bleaching has an adverse affect. Furthermore, although Herron et al does not disclose post-crosslink bleaching as a preferred step, it is disclosed as a recognized treatment for polyacrylic acid crosslinked fibers.

From the Office Action dated 4/26/2006 - With regard to the bleaching, Herron states that post-crosslink bleaching affects the WRV (water retention value) of the

fibers without providing details as to what the effect is on the WRV. These effects are discussed by Dean et al (4822453), who make a similar statement (col 9, lines 64-66) and disclose that a combination of pre-crosslink and post-crosslink bleaching results in higher fluid retention values as well as other processing advantages (col 17, line 32 to col 18, line 2, especially col 17, lines 51-53). Dean et al also discloses that the necessary amount of pre-crosslink and post-crosslink bleaching would be evident to one of ordinary skill in the art (col 17, lines 46-50). Dean et al and Herron et al are commonly assigned, share at least one inventor and relate to similar subject matter, thus it would be obvious to expect post-crosslink bleaching to be advantageous.

From the teaching of Dean et al, post-crosslink bleaching is not discouraged but can have advantageous effects on the fibers and other processing. One of ordinary skill in the art would have been familiar with both the Herron et al and Dean et al references, and would have been able to readily determine the necessary amount of pre-crosslink and post-crosslink bleaching required to obtain the advantages thereof. Thus, if motivation is needed, the general knowledge of one of ordinary skill, as revealed by Dean et al provide such motivation and make post-crosslinking bleaching an obvious step.

In short, Herron et al teaches the claimed treatments, which are a combination of steps known in prior art, the each step functioning as disclosed in Herron et al, and the sequence having predictable results.

With regard to the arguments against the combination of Cook et al in view of Herron et al, as discussed in the rejections, Herron et al teaches that polyacrylic acid crosslinked fibers are brighter than those crosslinked with alpha hydroxyl acids and that absorbent structures made from fibers crosslinked by polymeric polyacrylic acid have increased wet and dry resilience, thus motivation is provided. Why would it not have been obvious to one of ordinary skill in the art to use polyacrylic acid as a crosslinking agent in the process of Cook et al in view of Herron et al to achieve the disclosed advantages thereby?

The rejections over prior art are maintained.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 10 recite "bleached polyacrylic acid crosslinked cellulosic fibers" and "polyacrylic acid crosslinked cellulosic fibers treated with a bleaching agent", but do not clarify whether the bleaching of the fibers occurs prior to or subsequent to crosslinking. The claims also do not clarify whether the claimed increase in Whiteness Index occurs in the fibers prior to or subsequent to crosslinking.

Claims 1, 5 and 10 recite that the Whiteness Index "increases from a first value determined initially after treatment with the bleaching agent to a second value

determined up to 14 days after treatment with the bleaching agent." It is not clear when the initial determination of Whiteness Index is made. For instance, is the initial value determination made immediately after contact with the bleaching agent and the second value determined at the end of the bleaching step? Is the initial value determination made after a first bleaching step, with or without a washing step, and the second determination after a subsequent bleaching step? In either case, the second determination would be expected to show a higher Whiteness Index than the first? Or is the initial value determination made after a bleaching step and the second determination after a time interval with no intervening treatment steps between the determinations?

The remaining claims depend from and thus inherit the indefiniteness of Claims 1, 5 or 10.

#### **Claim Rejections - 35 USC § 102 and § 103**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3 and 10-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Herron et al (5549791).

Herron et al teaches crosslinking agents known in the art for use with cellulosic fibers, including C2-C9 polycarboxylic acids and polymeric polyacrylic acid (col 3, lines 15-53). Herron et al also discloses that polymeric polyacrylic acid is a preferred crosslinking agent because it is stable at higher temperatures and the crosslinked fibers are brighter than those crosslinked with alpha hydroxyl acids. In addition, absorbent

structures made from fibers crosslinked by polymeric polyacrylic acid have increased wet and dry resilience (col 3, lines 50-62).

Herron et al discloses that the fibers used in the invention may be partially or completely bleached and that bleached fibers are preferred for their superior brightness and consumer appeal (col 5, lines 30-35). Chlorine free bleaching processes can be used (col 5, lines 35-37). Herron et al also discloses that post crosslinking bleaching steps are known (col 13, lines 14-16).

Herron et al discloses absorbent pads (absorbent products) made using the fibers (cols 24-26, Examples VI-IX).

The fibers of Herron et al are thus bleached polyacrylic acid crosslinked cellulosic fibers and appear to be substantially identical to the claimed fibers. The limitation, "wherein the Whiteness Index of the fibers...increases from a first value determined initially after treatment with the bleaching agent to a second value determined up to 14 days after treatment," is not a limitation of the claimed structure itself, but a property thereof. The fibers of Herron et al will have or, at least, it would have been obvious to one of ordinary skill in the art to obtain, the claimed increase in Whiteness Index because, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

"When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Herron et al does not explicitly disclose hydrogen peroxide bleaching; however hydrogen peroxide bleaching is a chlorine free process and would have been an obvious option to one of ordinary skill in the art at the time of the invention.

Herron et al discloses that the fibers are useful in absorbent structures, such as paper towels and absorbent cores for diapers, sanitary napkins and catamenials (Abs; col 5, lines 37-40). Thus paper towels, diapers, sanitary napkins and catamenials comprising the fibers would have been obvious to one of ordinary skill in the art.

Claims 1 and 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al (5562740) in view of Herron et al (5549791).

Cook et al discloses individualized polycarboxylic acid crosslinked fibers that have been after bleached with an aqueous solution of sodium hydroxide and hydrogen peroxide (col 3, lines 42-45; col 13, lines 65-67). Cook further discloses an amount of sodium hydroxide to be applied of about 0.07 weight % to about 1.8 weight % of the dry fibers (1.4 to 36 lb/ton) and an amount of hydrogen peroxide to be applied of about 0.02 weight % to about 1.5 weight % of the dry fibers (0.4 to 30 lb/ton) (col 4, lines 42-45 and 49-51). The disclosed ranges of Cook et al for sodium hydroxide and hydrogen peroxide concentrations substantially overlap the claimed ranges. Cook et al discloses that the polycarboxylic acid crosslinked fibers can be treated by spraying sodium

hydroxide and hydrogen peroxide onto an air stream containing the fibers (col 14, lines 18-20). Alternatively, multistage bleaching and washing steps following crosslinking are embodied (col 14, lines 27-30).

Cook et al discloses that the fibers are useful in absorbent structures, such as paper towels and absorbent pads for diapers, sanitary napkins and catamenials (Abs; col 5, line 66 to col 6, line 1).

Cook et al does not disclose crosslinking with a polyacrylic acid.

The disclosure of Herron et al is detailed in the above rejection of Claims 1, 3 and 10-13.

The art of Cook et al, Herron et al and the instant invention is analogous as pertaining to bleached crosslinked fibers and absorbent products made therefrom. It would have been obvious to one of ordinary skill in the art to use a polymeric polyacrylic acid crosslinking agent in the fibers of Cook et al in view of Herron et al to provide brighter fibers and increased wet and dry resilience in absorbent structures made therefrom.

The crosslinking agent, bleaching agent(s) and all of the claimed method steps have been disclosed by or made obvious over Cook et al in view of Herron et al. The resulting composition or structure, bleached polyacrylic acid crosslinked fibers, is also disclosed or made obvious and appears to be substantially identical to the claimed structure. The fibers of Cook et al in view of Herron et al will have or, at least, it would have been obvious to one of ordinary skill in the art to obtain, the claimed increase in

Whiteness Index for reasons given in the above rejection of Claims 1 and 10-13 over Herron et al.

Alternatively, when using the conventional multistage bleaching and washing process disclosed by Cook et al, it would have been obvious to one of ordinary skill in the art to obtain an increased Whiteness Index following each successive bleaching stage over the value following the preceding stage.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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